

#### NORTH CAROLINA SOCIETLY OF SULVINIS

Southeastern Chapter November 3, 2012 Castle Hayne , NC

## Converting Flood Risk Models into a Digital Data Environment

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Outreach Planner II







#### D<sup>2</sup>E

# Digital Display Environment for NFIP Products Demonstration / Implementation







#### D<sup>2</sup>E - What is it?

**FEMA Products** 

**DFIRM** 

Database

THRM

Database

Flood Risk

Database

FMIS /

**IHRM** 

Viewer

## Digital Display Environment is defined as:

- Geospatially aware
- Database driven
- > Paperless
- Allowing "print-on-demand" products
- Without constraints of Cartographic rules

Tools and functionalities tailored to user groups will be provided in lieu of traditional "map" products.







Tools

Property Owner

Floodplain Manager

Insurance

Lenders/Map

Determinators

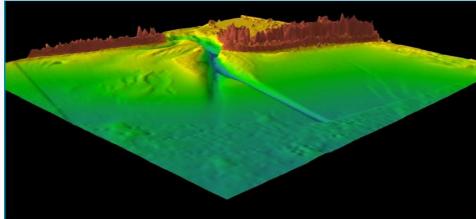
Mitigation, etc.

#### Coming Attraction: Updated Hazard Data

NCFMP is currently funded to update 50 counties with new / updated models.

All coastal counties will receive updated models that include new storm surge Still water information.

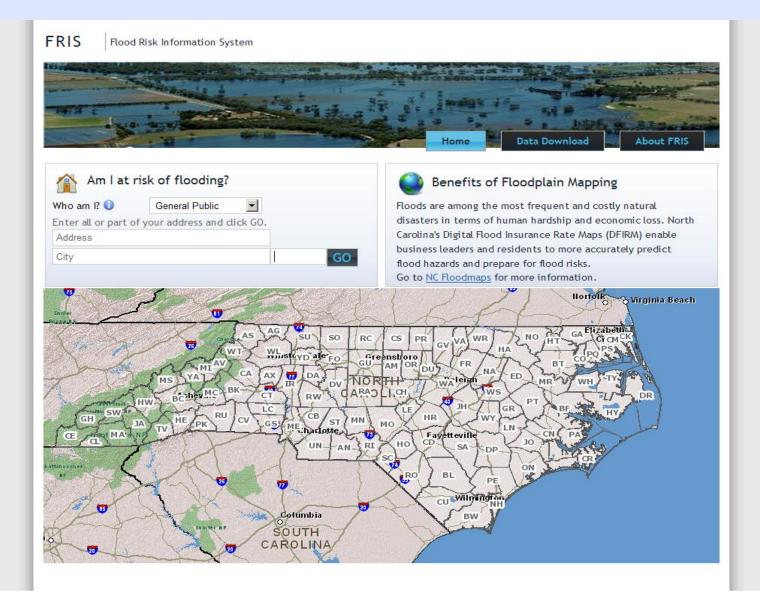










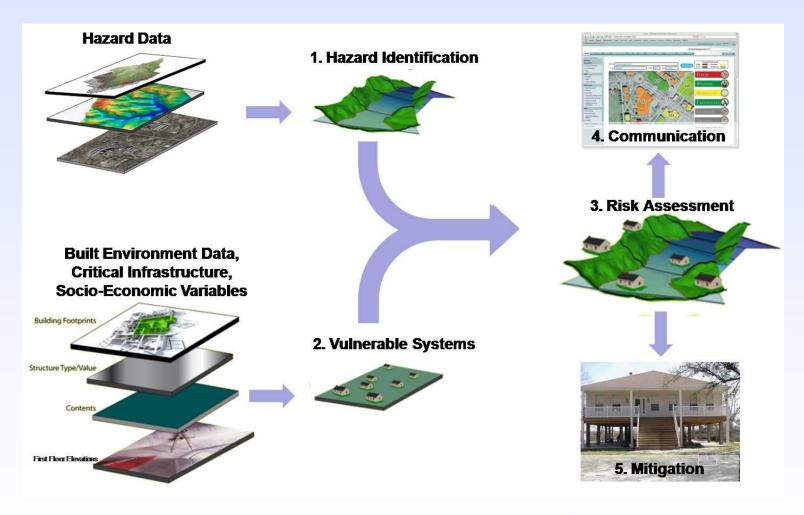








## Integrated Hazard Risk Management











#### IHRM Scope: Hazard Identification

Identifies and displays all natural hazards at different magnitude levels / annual frequency on the <u>parcel</u>, <u>statewide</u>, and <u>national level</u> for:

Riverine flooding

Dam failure

Levee failure

Coastal flooding

Storm surge from hurricanes

Coastal erosion

Landslides

Earthquakes

Coastal erosion

Landslides

**Earthquakes** 

Wind (straight line/hurricane)

**Tornadoes** 

Wildfire

Snow/Ice, Hail

Drought

Sea Level Rise







#### **Current & Intended Uses**

- Vulnerability and Hazard Risk Identification
- Loss Estimation
- Assistance with Recovery Operations
- Enhancements to Floodplain Mapping
- Sea Level Rise

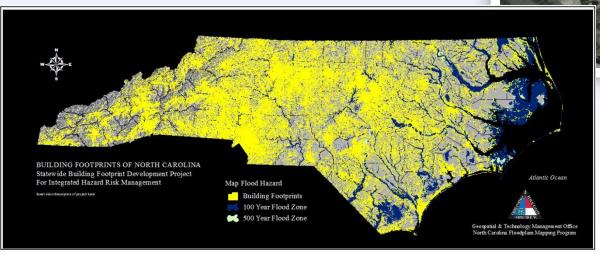






## Integration of High Resolution Data

- ➤ High-Resolution Data:
  - > 2010 Imagery,
  - > All natural hazards,
  - Building Footprints / FFE, &
  - > Critical Infrastructure.





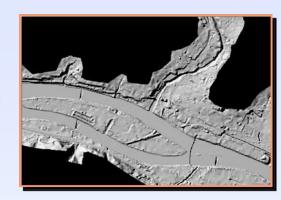




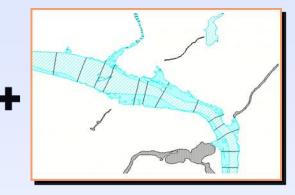
#### Ingredients of a DFIRM



**Base Map** 



**Topography** 



**Engineering Data** 



**DFIRM** 







## First Floor Elevation (FFE) collection

#### Reason for Development:

- > FFE adds tremendous value to the layer
- > FFE's are critical for loss estimations and risk assessments

#### Problem:

- Parcel databases do not contain this information
- Research of available Elevation Certificate databases
- > From NCEM, FEMA, & Local Databases
- Only a small percentage of homes in or near the SFHA have Elevation Certificates

#### Goal:

Attribute all buildings within 500-year floodplain with derived estimate for FFE







## **Building Footprints Layer**

#### Reason for Development:

- To know what portion of the structure is in a flood zone (e.g.: all in, all out, or partially in),
- > To provide expanded potential for additional hazard assessments.











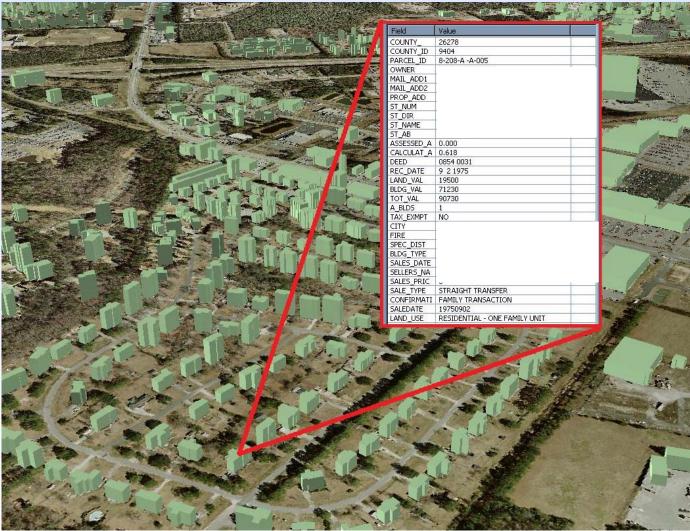








#### **Building Footprints Project**

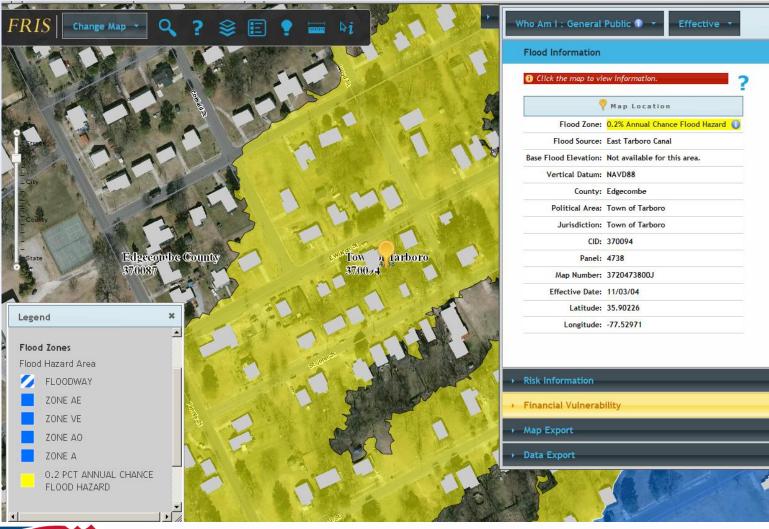








## FRIS DFIRM Map Symbology



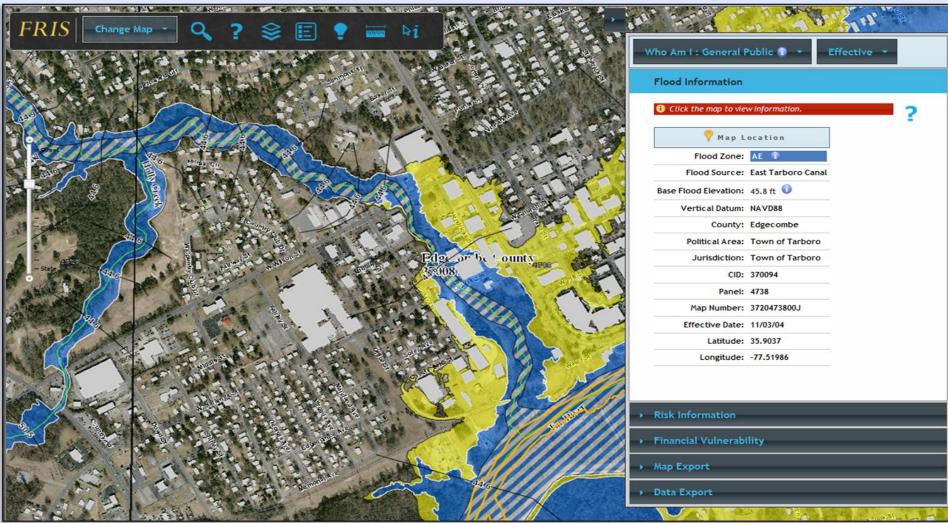






**Emergency Management** 

## FRIS DFIRM Display

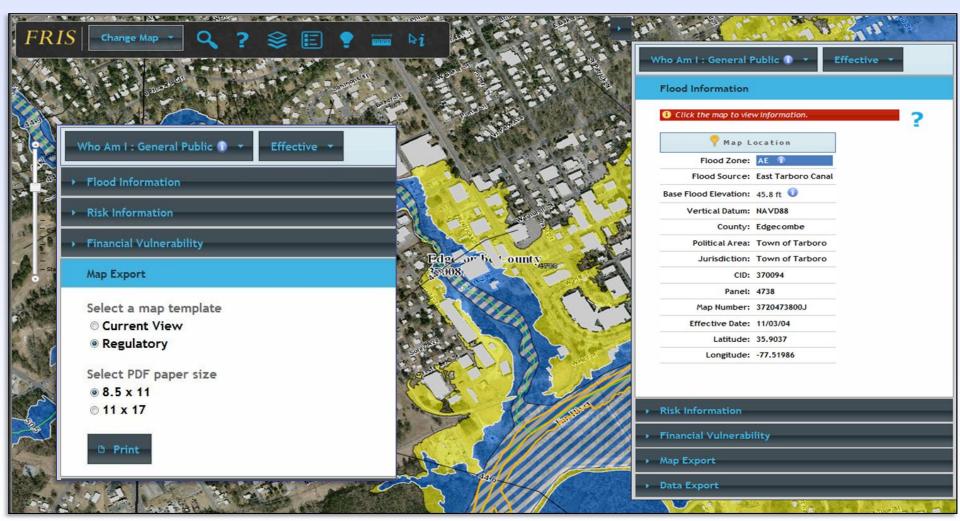








## FRIS Display View/Print/Map Export

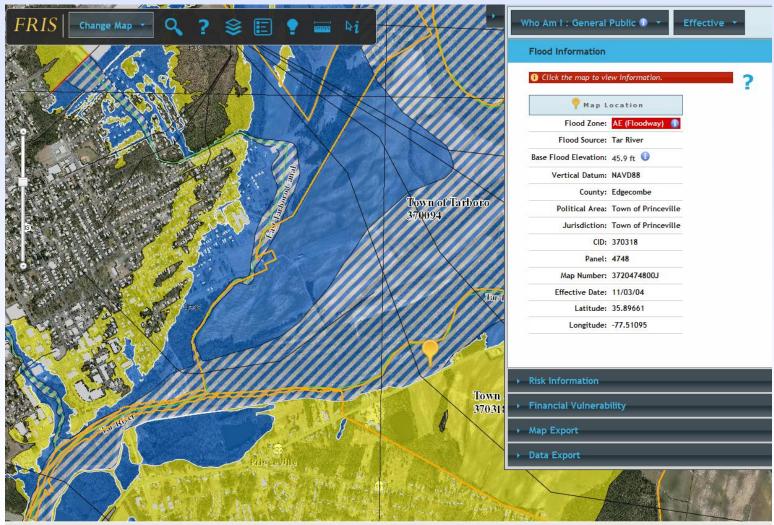








## FRIS DFIRM Floodway

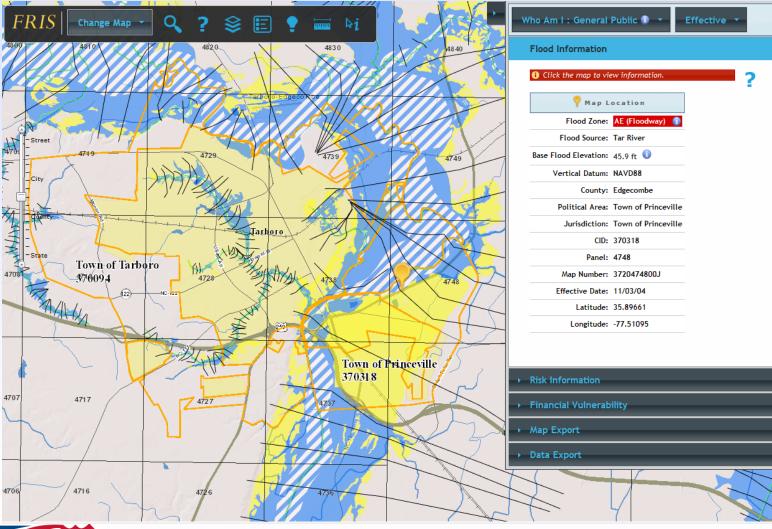








#### FRIS DFIRM Zoom out



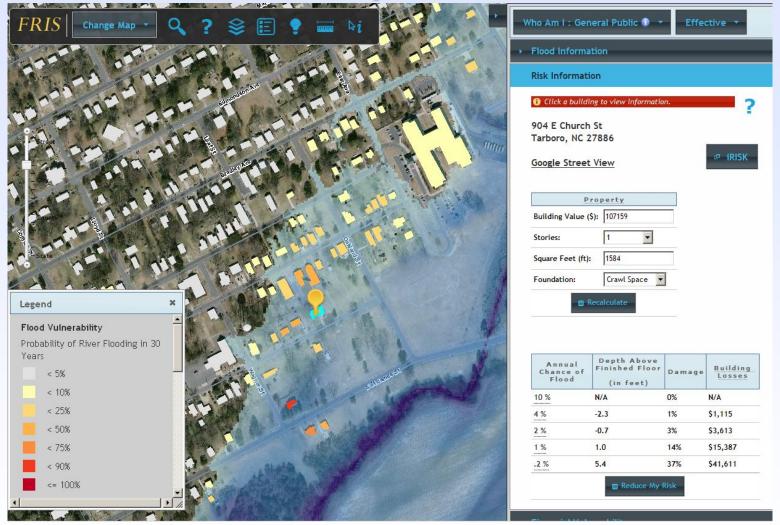








#### FRIS Vulnerability/Risk Information









#### FRIS Financial Vulnerability/Risk



Risk Information

losses.

#### Financial Vulnerability

#### 1 Click a building to view PVI information

Do you need flood insurance? Homeowner's insurance does not cover losses from flooding. Property owners living in flood prone data can purchase flood insurance from the National Flood Insurance Program (NFIP), which is administered by FEMA. The Personal Vulnerability Index (PVI) helps you determine if you are financially prepared in the event of major losses from flooding. The calculation below represents the average property in your area and is based on census data and insurance statistics. To determine your actual PVI, enter the flood insurance coverage you currently have, your annual income, and any other assets such as savings that you can apply to cover your

Insurance Coverage (\$):	0
Yearly Income (\$):	58922
Savings & Assets (\$):	0
Deductible (\$):	0

Based on the building value of \$107,159: If the building is 100% damaged, your uncovered structural losses are \$107,159.

It will take  $182\,\%$  of your yearly income and assets to cover structural damage.

The PVI rating for this location is Medium.

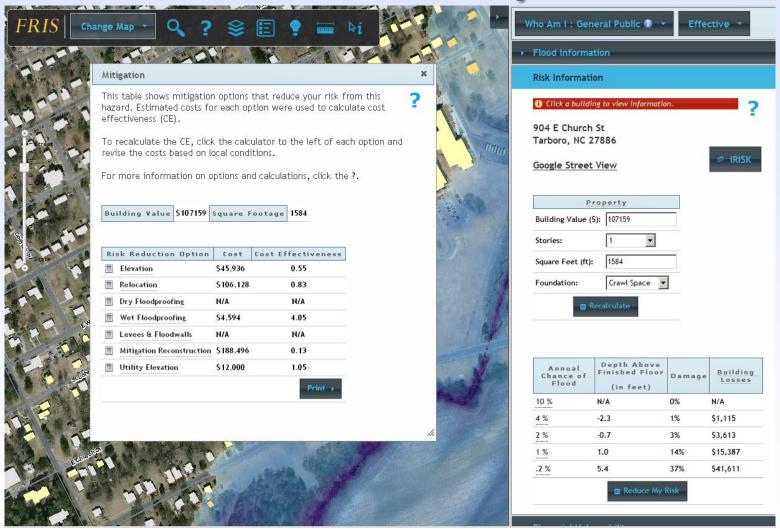
You also need to consider other losses from damages







## FRIS Reduce My Risk

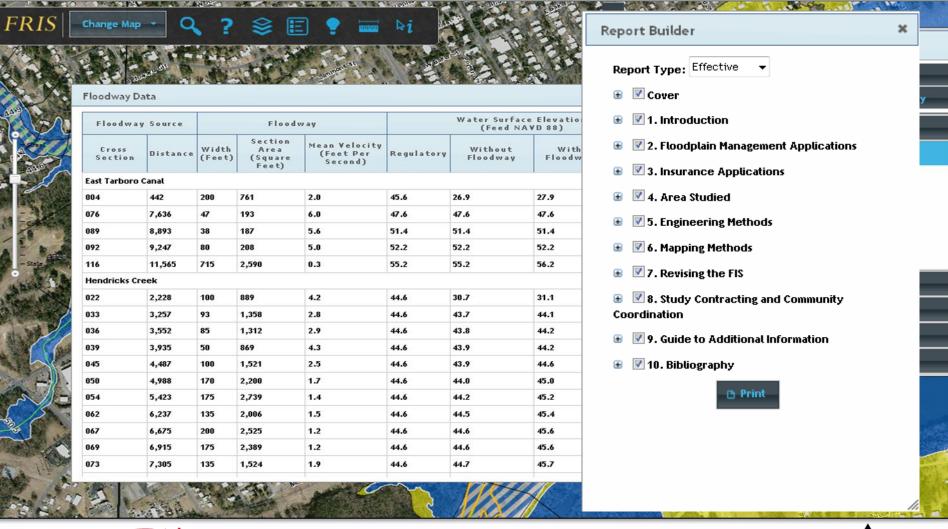








## FRIS FIS Display

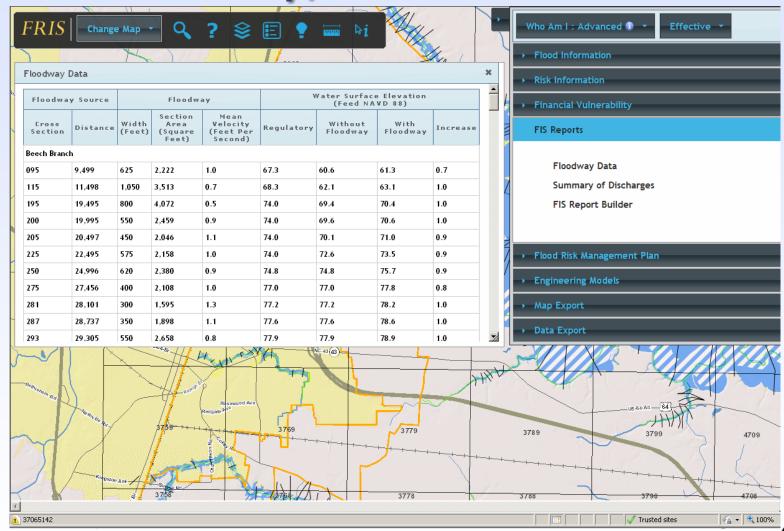








#### FRIS Floodway/Stillwater Data Table

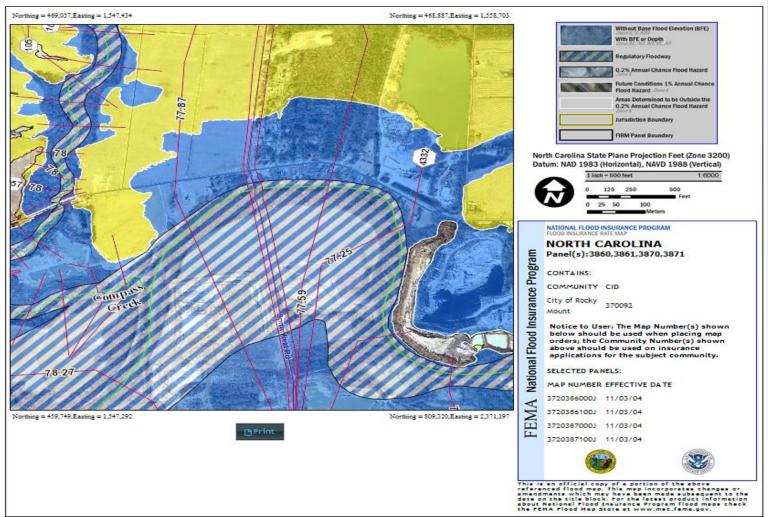








#### FRIS Produce a FIRMETTE









#### FRIS Preliminary DFIRM

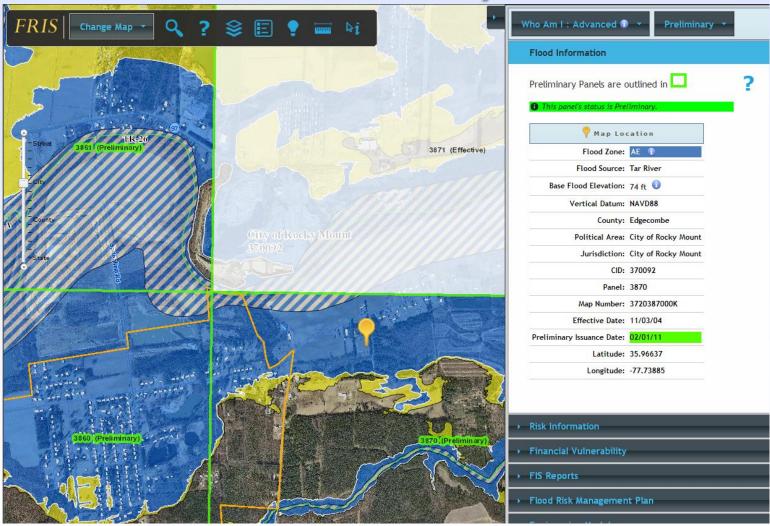








### FRIS Preliminary DFIRM









#### Questions?

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#### Lets Look Live!







